

CLAIMS

1. Method for inputting an information signal into
5 a power cable which is connected to a voltage supply and
which comprises at least one or more conductors, a
dielectric provided around the conductors and a
conductive earth sheath arranged wholly or partially
around the dielectric, the method comprising of
10 inputting a pulse-like information signal at a first
position via the earth sheath in order to produce a
corresponding pulse-like information signal which is
propagated to a second position in the dielectric of the
power cable.

15 2. Method as claimed in claim 1, wherein inputting
of a pulse-like information signal into the power cable
comprises of inputting the information signal directly
into the earth sheath, into an earth wire between the
earth sheath and the earth or into a line between the
20 voltage source and the earth.

3. Method as claimed in claim 1 or 2, comprising of
transmitting data between said positions via the power
cable.

4. Method as claimed in any of the foregoing
25 claims, wherein general data comprise control data or
data about the power cable itself.

5. Method as claimed in any of the claims 1-4,
comprising of synchronizing the time between the first
and second position.

30 6. Method as claimed in claim 5, comprising of
periodically transmitting a synchronization information
signal at a predetermined time interval and periodically
synchronizing time registering means arranged close to
the first and second position using the periodically
35 transmitted synchronization signal.

7. Method as claimed in claim 5 or 6, comprising of diagnosing the dielectric on the basis of transmitting the information signal between said positions.

8. Method as claimed in any of the foregoing
5 claims, wherein the power cable comprises one or more branches.

9. Method as claimed in any of the foregoing claims, comprising of inputting the information signal when one or more of the conductors are in voltage-
10 carrying mode.

10. Method as claimed in any of the foregoing claims, wherein the voltage source is a station of an external electricity grid.

11. System for inputting an electrical information
15 signal into a power cable which is connected to a voltage source and which comprises at least one or more conductors, a dielectric provided around the conductors and a conductive earth sheath arranged wholly or partially around the dielectric, comprising:

20 - inputting means for inputting a pulse-like information signal at a first position via the earth sheath, herein producing a corresponding pulse-like information signal which is propagated to a second position in the dielectric of the power cable.

25 12. System as claimed in claim 11, wherein the inputting means are embodied to input the information signal directly into the earth sheath, into an earth wire between the earth sheath and the earth or into a line between the voltage source and the earth.

30 13. System as claimed in claim 11 or 12, wherein the current inputting means comprise one or more coils positioned close to the earth sheath, earth wire and/or the line between the voltage source and the earth for the purpose of inputting the current pulse.

14. System as claimed in any of the claims 11-13, comprising impedance-increasing means whereby the impedance in one or more earth wires can be increased locally such that the information signal to be inputted causes a corresponding pulse-like information signal particularly in the dielectric of the power cable.

15. System as claimed in claim 14, wherein the impedance-increasing means comprise one or more ferrite elements arranged in the relevant earth wire(s).

16. System as claimed in any of the claims 11-15, also comprising detecting means for detecting the voltage pulses propagated along the power cable.

17. System as claimed in any of the claims 11-16, comprising first respectively second time registering means and time synchronizing means positioned at the first and second position for the purpose of synchronizing the time registering means relative to each other using an information signal inputted into the earth sheath.

18. System as claimed in claim 17, wherein the inputting means are adapted to input the information signal periodically at a predetermined time interval and the synchronizing means are adapted to periodically synchronize the first and second time registering means.

19. System as claimed in claim 17 or 18, wherein the inputting means, detecting means and the time registering means are adapted to determine the positions of irregularities causing partial discharges in the dielectric of the power cable.

20. System as claimed in any of the claims 11-19, wherein the voltage source is a station of an external electricity grid.

21. System or method as claimed in any of the foregoing claims, wherein the voltage on the voltage-carrying cables lies in the range of 200 V to 400 kV.